Amendments to the Specification:

Please replace the paragraph extending from page 4, line 11 to line 18, with the following amended paragraph:

FIG. 2A is a code block 200 containing references to variables A and B in accordance with the prior art. Code block 200 includes code 202, 204 which define variables A and B, respectively. Code block 200 also includes code 206, 208, which use variables ~~A and B~~ B and A, respectively. Code block 200 may also include other code, which is not illustrated. For purposes of this illustration, assume that only one physical register is available.

Please replace the paragraph extending from page 4, line 19 to line 30, with the following amended paragraph:

FIG. 3 is a register interference graph 300 for code block 200 of FIG. 2A in accordance with the prior art. Referring now to FIGS. 1, 2A and 3 together, from Start Operation 101, register interference graph 300 is built in Build Graph Operation 102. As is well known, variable A is live between ~~the~~ code 202, when variable A is defined, and code 208, when variable A is used. Since variable B is defined while variable A is live, there is an interference edge between node A and node B, i.e., an interference edge between node A and node B is defined and node A is connected to node B in register interference graph 300.

Please replace the paragraph extending from page 17, line 23 to line 34, with the following amended paragraph:

FIG. 10 is a register interference graph 1000 for code block 900 of FIG. 9 in accordance with one embodiment of the present invention. Referring now to FIGS. 6, 9 and ~~11~~ 10 together, from Insert Spill Code Operation 610, register interference graph 1000 is built in Build Graph Operation 602. Variable A is live between code 202 and code 902. Variable B

GUNNISON, McKAY & HODGSON, L.L.P.
Garden West Office Plaza
1900 Garden Road, Suite 220
Monterey, CA 93940
(831) 655-0880
Fax (831) 655-0888

is live between code 204 and code 206. Variable A' is live between code 904 and code 208. Since none of variables A, B or A' are defined or used while any of the other variables A, B or A' are live, there are no interference edges between nodes A, B or A'.

Please replace the paragraph extending from page 18, line 12 to line 23, with the following amended paragraph:

As set forth above, the interference edge between node A and node B of directional register interference graph 700 of FIG. 7 is an example of a uni-directional interference edge in accordance with one embodiment of the present invention. In another embodiment, an interference edge exists between a primary node and another primary node. In accordance with this embodiment, each end of the interference edge is defined as a pass edge, such that the interference edge has two pass edges. An interference edge that has two pass edges is a bi-directional interference edge as discussed further below in reference to FIGS. 11 and 12.

Please replace the paragraph extending from page 19, line 11 to line 21, with the following amended paragraph:

Similarly, variable D is live between the code 1104, when variable D is defined, and code 1108, when variable D is used. Since variable C is ~~defined~~ used while variable D is live, i.e., between code 1104 and code 1108, node D is a primary node. Accordingly, the end of the interference edge adjacent node D is a pass edge as indicated by the arrow pointing at node D. Overall, the interference edge between node C and node D of directional register interference graph 1200 of FIG. 12 is an example of a bi-directional interference edge in accordance with one embodiment of present invention.

GUNNISON, McKAY & HODGSON, L.L.P.
Garden West Office Plaza
1900 Garden Road, Suite 220
Monterey, CA 93940
(831) 655-0880
Fax (831) 655-0888

This listing of claims replaces all prior versions, and listings of claims in the instant application:

Listing of Claims:

1. (Original) A method comprising:

adding direction to interference edges of a register interference graph; and

choosing a node of said register interference graph to spill based upon a pass degree of said node.

2. (Original) The method of Claim 1 further comprising building said register interference graph.

3. (Original) The method of Claim 1 wherein said register interference graph comprises:

a first node;

a second node; and

an interference edge between said first node and said second node, said first node being a primary node.

4. (Original) The method of Claim 3 wherein said second node is a secondary node.

5. (Original) The method of Claim 4 wherein said interference edge consists of a uni-directional interference edge.

6. (Original) The method of Claim 4 wherein an end of said interference edge adjacent said first node comprises a pass edge and wherein an end of said interference edge adjacent said second node comprises a non-pass edge.

7. (Original) The method of Claim 3 wherein said second node is a primary node.

GUNNISON, McKAY & HODGSON, L.L.P.
Garden West Office Plaza
1900 Garden Road, Suite 220
Monterey, CA 93940
(831) 655-0880
Fax (831) 655-0888

8. (Original) The method of Claim 7 wherein said interference edge consists of a bi-directional interference edge.

9. (Original) The method of Claim 7 wherein an end of said interference edge adjacent said first node comprises a pass edge and wherein an end of said interference edge adjacent said second node comprises a pass edge.

10. (Original) The method of Claim 3 wherein a first variable associated with said first node is live when a second variable associated with said second node is defined or used.

11. (Currently amended) A method comprising:

building ~~an~~ a register interference graph comprising defining an interference edge between a first node and a second node;

determining that a first variable associated with said first node is live when a second variable associate with said second node is defined or used; and

defining an end of said interference edge adjacent said first node as a pass edge.

12. (Original) The method of Claim 11 further comprising defining a pass degree of said first node as a number of pass edges of said first node.

13. (Original) The method of Claim 12 further comprising using said pass degree when choosing to spill a node from said register interference graph.

14. (Currently amended) A system comprising:

a processor; and

GUNNISON, McKAY & HODGSON, L.L.P.
Garden West Office Plaza
1900 Garden Road, Suite 220
Monterey, CA 93940
(831) 655-0880
Fax (831) 655-0888

a memory having a method of allocating a set of variables to a set of physical registers using selective spilling stored therein, wherein upon execution of said method, said method comprises:

building ~~an~~ a register interference graph comprising defining an interference edge between a first node and a second node;

determining that a first variable associated with said first node is live when a second variable associate with said second node is defined or used; and

defining an end of said interference edge adjacent said first node as a pass edge.

15. (Original) The system of Claim 14 wherein said method further comprises defining a pass degree of said first node as a number of pass edges of said first node.

16. (Original) The system of Claim 15 wherein said method further comprises using said pass degree when choosing to spill a node from said register interference graph.

17. (Original) A computer program product having a method of allocating a set of variables to a set of physical registers using selective spilling stored therein, wherein upon execution of said method, said method comprises:

adding direction to interference edges of a register interference graph; and

choosing a node of said register interference graph to spill based upon a pass degree of said node.

18. (Original) The computer program product of Claim 17 wherein said method further comprises building said register interference graph.

GUNNISON, McKAY & HODGSON, L.L.P.
Garden West Office Plaza
1900 Garden Road, Suite 220
Monterey, CA 93940
(831) 655-0880
Fax (831) 655-0888

19. (Original) The computer program product of Claim 17 wherein said register interference graph comprises:

a first node;

a second node; and

an interference edge between said first node and said second node, said first node being a primary node.

20. (Original) The computer program product of Claim 19 wherein said second node is a secondary node.

21. (Original) The computer program product of Claim 20 wherein said interference edge consists of a uni-directional interference edge.

22. (Original) The computer program product of Claim 20 wherein an end of said interference edge adjacent said first node comprises a pass edge and wherein an end of said interference edge adjacent said second node comprises a non-pass edge.

23. (Original) The computer program product of Claim 19 wherein said second node is a primary node.

24. (Original) The computer program product of Claim 23 wherein said interference edge consists of a bi-directional interference edge.

25. (Currently amended) The ~~method~~ computer program product of Claim 23 wherein an end of said interference edge adjacent said first node comprises a pass edge and wherein an end of said interference edge adjacent said second node comprises a pass edge.

GUNNISON, McKAY & HODGSON, L.L.P.
Garden West Office Plaza
1900 Garden Road, Suite 220
Monterey, CA 93940
(831) 655-0880
Fax (831) 655-0888

26. (Currently amended) The ~~method~~ computer program product of Claim 19 wherein a first variable associated with said first node is live when a second variable associated with said second node is defined or used.

27. (Original) A computer system comprising:

means for adding direction to interference edges of a register interference graph; and

means for choosing a node of said register interference graph to spill based upon a pass degree of said node.

28. (Original) The computer system of Claim 27 further comprising means for building said register interference graph.

29. (Original) The computer system of Claim 27 further comprising means for spilling said node.

30. (New) The method of Claim 1 wherein the pass degree of a node of said register interference graph is defined as the number of pass edges of said node.

GUNNISON, McKAY & HODGSON, L.L.P.
Garden West Office Plaza
1900 Garden Road, Suite 220
Monterey, CA 93940
(831) 655-0880
Fax (831) 655-0888